CLAIMS

1. The circuitboard (30) having at least one electrical conduction level (EL) for relaying electrical signals and/or currents as well as at least one optical conduction level (OL) for relaying optical signals, said conduction levels (EL, OL) being interconnected and arranged in a stack one above the other within the circuitboard, characterized in that the optical conduction level (OL) as a conducting element comprises at least one thin glass layer (11, 17).

2. A circuitboard according to claim 1, characterized in that the optical conduction level (OL) is formed by an optical sandwich (15; 15.1, ..., 15.3) comprising, in addition to the minimum of one thin glass layer (11, 17), at least one carrier plate (10, 16) which is joined to the minimum of one thin glass layer (11, 17) over the area.

3. A circuitboard according to claim 2, characterized in that the optical sandwich (15.1) comprises at least two carrier plates (10, 16) with a minimum of one thin glass layer (11) arranged between them.

4. A circuitboard according to claim 2, characterized in that the optical sandwich (15.2, 15.3) comprises at least two thin glass layers (11, 17) which are joined over the area to the minimum of one carrier plate (10).

5. A circuitboard according to claim 4, characterized in that the minimum of two thin glass layers (11, 17) are joined together over the area and are arranged on one side of the minimum of one carrier plate (10).

6. A circuitboard according to claim 4, characterized in that the minimum of two thin glass layers (11, 17) are arranged on opposite sides of the minimum of one carrier plate (10).

7. A circuitboard according to one of claims 2-6, characterized in that the carrier plates (10, 16) are each made of an electrically insulating material which is used as the base material for the

production of electric circuitboards, preferably an Aramid-reinforced resin.

8. A circuitboard according to one of claims 1-7, characterized in that the thin glass layers (11, 17) have a thickness of less than or equal to 1.1 mm and are made of a borosilicate glass.

9. A circuitboard according to one of claims 1-8, characterized in that the thin glass layers (11, 17) and the carrier plates (10, 16) are glued or pressed together.

10. A circuitboard according to one of claims 1-9, characterized in that at least individual layers of the thin glass layers (11, 17) are designed as continuous layers.

11. A circuitboard according to one of claims 1-9, characterized in that at least individual layers of the thin glass layers (11, 17) are structured so as to form individual optical conductors (13) within the layer, separated from one another by interspaces (12).

12. A circuitboard according to claim 11, characterized in that the exposed surfaces of the individual optical conductors (13) are covered with a reflective layer (29).

13. A circuitboard according to one of claims 11 and 12, characterized in that the interspaces (12) between the optical conductors (13) are filled with a filling material (14, 18).

14. A circuitboard according to one of claims 1-13, characterized in that coupling openings (26, 28) are provided for optical coupling of optically active elements (25, 27) arranged on the top and or bottom sides of the circuitboard (30), so that the concealed thin glass layer(s) (11, 17) or optical conductors (13) located in an optical conduction level (OL) are accessible from the outside through these coupling openings.

15. A method of producing a circuitboard according to one of claims 1

through 14, characterized in that in a first step at least one thin glass layer (11, 17) is joined over the entire area to at least one carrier plate (10, 16) to form an optical sandwich (15; 15.1, ..., 15.3), and in a second step, the optical sandwich (15; 15.1, ..., 15.3) is connected to the circuitboard (30) as an optical conduction level (OL) having one or more electrical conduction levels (EL) in a stack arrangement.

16. A method according to claim 15, characterized in that the thin glass layer (11, 17) and the carrier plate (10, 16) are joined together by pressing or gluing.

17. A method according to one of claims 15 and 16, characterized in that the thin glass layer (11, 17) joined to the carrier plate (10, 16) is structured between the first and second steps.

18. A method according to claim 17, characterized in that the thin glass layer is removed in certain predetermined areas in order to structure the thin glass layer (11, 17) to form individual optical conductors (13) separated from one another by interspaces (12).

19. A method according to claim 18, characterized in that the removal of the thin glass layer (11, 17) is accomplished by means of lasers or by mechanical or chemical methods.

20. A method according to one of claims 17 through 19, characterized in that the free surface area of the structured thin glass layer (11) is coated with a reflective layer (29), preferably made of a metal, by vapor deposition, galvanic or chemical deposition.

21. A method according to one of claims 17 through 20, characterized in that the interspaces (12) in the structured thin glass layer (11, 17) are filled with a filling material (14, 18) having a refractive index lower than the refractive index of the glass of the thin glass layer (11, 17).